

Amendments to the Specification

Please replace the paragraph beginning at page 3 line 10 with the following rewritten paragraph:

Referring to FIG. 1, one embodiment of an IP router 10 is shown in accordance with the present invention. As can be seen, the router includes a number of interfaces, interfaces A, B, C. Interface A couples to VoIP gateway 12, which in turn couples to the public switched telephone network (PSTN). H.323 gateways 12 provide services to H.323 clients so that they can communicate with non H.323 entities. The most common type of H.323 gateways allow communications between ~~H.3223~~ H.323 terminals and telephones on the circuit switched network. The gateway must provide translations between different transmission formats, communications procedures and audio codecs. Interface B couples to one or more endpoint IP phone/PC phone terminal(s) 16, interface B is shown to have a H.323 real time traffic flow to a first endpoint terminal. The endpoint terminal 16 provides real time communications and supports voice communications, and can optionally support video and data communications. The most common ~~H.3223~~ H.323 terminals are applications, such as Microsoft's NetMeeting, running on a PC.

Please replace the paragraph beginning at page 4 line 3 with the following rewritten paragraphs:

The present invention enables maintaining an up to date status of bandwidth allocation through periodic updates of the connection table in the corresponding router. In order to update the connection table, the IP router periodically, e.g., at 10 second intervals, ~~(e.g., at 10 second intervals)~~ sends an H.323 ~~IRQ~~ Info Request (IRQ) status query message to the H.323 endpoints in its connection table. The router will then set the ~~Call_Ref value~~ Call Reference Value (Call Ref value) of the IRQ message to 0. The H.323 endpoint will respond with an ~~IRR~~ Info Request Response (IRR) message to inform the router

about the status of all of its calls, e.g., active or inactive (e.g., active or inactive), the call references of its active calls, and the bandwidth utilized by each the call. A table is created and maintained in the router for each interface so that a total of the currently allotted bandwidth may be readily updated and accessed. Referring to Fig. 2, ~~an exemplary embodiment of a router call connection table (Table II) is shown for Interface 1 of router R1 in the network 200. The table includes various categories for each connection of a respective interface. As shown, the table includes a category for Source IP Address, Call Reference, Utilized Bandwidth and Connection Status. The table also illustrates that each call connection of an associated gateway 202 may be tracked separately. In accordance with the present invention, the router may also operate so that queries to the endpoints are made only to the real-time or otherwise highest priority connections.~~

FIG. 2 shows an exemplary embodiment of a router call connection table. In the example shown, Table II, is the table for gateway C and endpoint A, B, and 3 interfaces of router R1 of network 200. Router R1 has interfaces to gateway C, endpoints EP1 A, EP2 B, EP3 and routers R2, R3, and 4. In addition, router R2 has an interface to router R4. The table includes various categories for each connection of a respective interface. As shown, the table includes a category for source IP address, call reference value, utilized bandwidth and connection status. As can be seen from Table II, each call connection of an associated gateway 202 may be tracked separately. In accordance with the present invention, the router may also operate so that queries to the endpoints are made only to the real-time, or otherwise highest priority connections.

Please replace the paragraph beginning at page 4 line 20 with the following rewritten paragraph:

For the response part of the query, if the router endpoint has no calls active for the specific query, the router endpoint will set the Call_ref value Call Ref value of the IRR message to 0 indicating that it has no active calls. In

this case, the router will update its table by deleting the entry belonging to the call and decrementing the number of H.323 connections in the connection table. When the number of H.323 calls reaches the maximum, the router will drop packets of any new connections.

Please replace the paragraph beginning at page 4 line 26 with the following rewritten paragraph:

When the number of calls or the bandwidth allotment for a router interface reaches its maximum, the router now can do one of two things to inform the endpoint to disconnect the call if the maximum number of calls is reached/exceeded. A first approach is to do nothing and continue dropping packets of new calls. In this approach, the endpoints will realize that they are experiencing 100% packet loss, ~~(e.g., by the RTPCP messages interchanged between the endpoints)~~ e.g., by the RTP/RTCP messages interchanged between the endpoints. In this case the higher layers in the terminals will terminate the call because it experiences too much packet loss.

Please replace the paragraph beginning at page 5 line 3 with the following rewritten paragraph:

In the second approach, the Router first obtains the Call_Ref value of the new call. The router ~~it~~ will then construct a new message by using the non-Standard H.245 message format and transmit the message ~~it~~ to the endpoint to inform the endpoint ~~it~~ that to terminate the call. This new message will have the following information:

Name	Network Congestion Disconnect (NCD)
Call_Ref	xx

Please replace the paragraph beginning at page 5 line 9 with the following rewritten paragraph:

Referring to FIG. 3, there is shown another embodiment of an IP network 20 which utilizes the present invention. As shown, the network 20 includes four routers, IP router 1, 2, 3, 4. Each of the IP routers 1, 2, 3, 4 are part of the overall IP network 20 and may include connections to one or more H.323 endpoints. As shown, router 1 and router 3 couple to a first H.323 endpoint 22 24, e.g., an IP phone or PC phone, ~~(e.g., an IP phone or PC phone)~~ and router 2 and router 3 each couple to a second H.323 endpoint 24 22. The IP network couples to the PSTN network 26 and voice switches 28 through a VoIP gateway 30 that couples to router 4. In addition, although the endpoints shown in ~~Figs.~~ FIGs. 1 and 2 are described as IP or PC phones, it would be understood that the endpoints may also be endpoints with video and/or multimedia capabilities.

Please replace the paragraph beginning at page 5 line 19 with the following rewritten paragraph:

FIG. 3 ~~Fig. 3~~ illustrates that an optional external device 32 can also be responsible for querying the associated endpoints of a router, counting the number of connections and associated bandwidth utilization, and blocking new connections when the maximum capacity is reached, as in the case of the router. The basic structure of the external device 32 is shown in ~~Fig. 4~~ FIG. 4. As shown, the device includes a digital processor 34 and associated memory 36 for storing the count, query and update program for execution by the processor. A communications interface 38 for communicating with the endpoints and corresponding router(s) is also included.

Please replace the paragraph beginning at page 5 line 27 with the following rewritten paragraph:

Referring to FIG. 5, an alternate network configuration 50 having routers R1, R2, R3 for use in connection with the present invention is shown. FIG. 5 illustrates that multiple IP telephone (or terminal) devices 52 can be coupled to an IP network through a single VoIP gateway. With such a configuration, a single IRQ query to the gateway 56 54 will provide information a snapshot (of all the active calls together with information about the bandwidth of each call) about all of the active calls, together with information about a) the bandwidth and b) the call reference value of each call of the VoIP gateway, or other specific bandwidth which is allocated through the gateway. Such a configuration is extremely efficient, for providing multiple connection information back to the router. Implementation of the present invention is straightforward in that, the IRQ and IRR message formats, along with a methodology for counting need only be programmed into the routers or corresponding external device.